

→ DO NOT PRINT ←

In the Claims

[that has been digested by]

SEVEN TIMES

1. (Amended) A method for dewatering biological sludge resulting from
thermophilic digestion process

comprising:

[s]

a. adding a polymeric quaternary ammonium compound, as primary component, to the biological sludge; and

b. adding a polyacrylamide to the biological sludge;

[s]

such that any combination of the polymeric quaternary ammonium compound and of the polyacrylamide enhances dewatering of the sludge.

FIVE TIMES

2. (Amended) The method for dewatering biological sludge according to claim 1, wherein the polymeric quaternary ammonium compound is from the di-allyl di-methyl ammonium chloride (DADMAC) family.

[s are]

SIX TIMES

3. (Amended) The method for dewatering biological sludge according to claim 1, wherein the polymeric quaternary ammonium compound is epichlorohydrin di-methyl amine (epi-DMA) compounds.

[family]

[s are from]

4. (THREE Amended) The method for dewatering biological sludge according to claim 1, wherein the polymeric quaternary ammonium compound is added directly to the sludge

[and],

[upon]

following the formation of microflocs of the sludge from the addition of the polymeric quaternary ammonium compound, polyacrylamide, a cationic polyacrylamide, is added

[to form a floc that dewater the sludge].

5. (THREE Amended) The method for dewatering biological sludge according to claim 4, wherein the polymeric quaternary ammonium compound and the cationic polyacrylamide are in an approximately 1:1 ratio, with the cationic polyacrylamide having a higher molecular

[weight than the polymeric quaternary ammonium compound does.]

•
•
•

TWICE

19. (Amended) The method of claim of claim 16 wherein the polyacrylamide is cationic or anionic.

* 6. (Previously Amended) The method for dewatering biological sludge according to claim 4, wherein ratio^[S] of the polymeric quaternary ammonium compound with respect to the cationic polyacrylamide ranges from about 1:10 to about 20:1.

* 7. (Previously Amended) The method for dewatering biological sludge according to claim 4, wherein the polymer concentration to solids ratio of total polymer dosage requirement in relationship to percentage of solids component of the sludge is between about 50 ppm:1 percent and about 300 ppm:1 percent.

* 8. (Previously Amended) The method for dewatering biological sludge according to claim 1, wherein the polymeric quaternary ammonium compound is added directly to the sludge, in an amount sufficient to cause formation of a cationic overcharge within a developed microfloc system, wherein the polyacrylamide is a anionic polyacrylamide added for final floc formation.

^
[and an] [is then]

9. Cancelled

* 10. (Previously Amended) The method for dewatering biological sludge according to claim 8, wherein the polymeric quaternary ammonium compound and the anionic polyacrylamide are in an approximately 10:1 ratio, with the anionic polyacrylamide having a higher molecular weight than the polymeric quaternary ammonium compound.

^
[does]

11. The method for dewatering biological sludge according to claim 10, wherein the anionic polyacrylamide is about 40% anionic.

* NO OPINION EXPRESSED OR IMPLIED WHETHER THIS STATUS INDICATOR IS CORRECT

* 12. (Previously Amended) The method for dewatering biological sludge according to claim 8, wherein ratio^[S] of the polymeric quaternary ammonium compound to the anionic polyacrylamide ranges from about 1:10 to about 20:1.

* 13. (Previously Amended) The method for dewatering biological sludge according to claim 8, wherein polymer concentration to solids ratio of total polymer dosage requirement in relationship to percentage of solids component of the sludge is between approximately 50 ppm:1 percent and approximately 300 ppm:1 percent.

14. The method for dewatering biological sludge according to claim 1, wherein the biological sludge is mixed with primary sludge.

[A composition for dewatering biological sludge]

* 15. (Currently Amended) The method according to claim 1, [COMPRISING] [S], [AS] wherein the polymeric quaternary ammonium compound is a primary component, and polyacrylamide is a secondary component, said components being present [IN THE COMPOSITION AS] at a ratio sufficient to enable dewatering of the biological sludge.

[THE COMPOSITION TO FUNCTION AS AN AGENT FOR DEWATERING BIOLOGICAL SLUDGE FROM A THERMOPHILIC DIGESTION PROCESS]

* 16. (Currently Amended) The method for dewatering biological sludge according to claim 1, wherein the polymeric quaternary ammonium compound is used in solution or in dry form.

[THE POLYACRYLAMIDE AND]

[S are]

* 22. (Currently Amended) A method for treating a sludge comprising water and solids, wherein the solids comprise thermophiles,

the method comprising:

contacting the sludge according to a technique selected from a group of techniques including: contacting with a polymeric quaternary ammonium compound along with a polyacrylamide to form a treated sludge

and contacting the sludge

first

with the polymeric quaternary ammonium compound and then with the polyacrylamide.